Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1. (Currently Amended) A cryogenic chamber comprising:

an outer vacuum vessel; [[,]]

an inner cryogen vessel; [[,]]

a turret housing a neck tube ~~itself providing~~ that provides external access to the inner cryogen vessel; [[,]] and

a pulse tube refrigerator ~~itself comprising~~ which includes at least one pulse tube and at least one regenerator tube; [[,]] wherein,

the pulse tube refrigerator is located within a vacuum contained between the outer vacuum vessel and the inner cryogen vessel; [[and]]

the pulse tube refrigerator and the neck tube share a single turret;

~~characterized in that the~~ at least one cooling ~~stage(s)~~ stage of the pulse tube refrigerator ~~is/are~~ is rigidly mechanically connected to the neck tube by highly conductive thermal links; and [[,]]

the at least one pulse ~~tube(s)~~ tube and the at least one regenerator ~~tube(s) being~~ tube are displaced away from the neck tube and from each other.

Claim 2. (Currently Amended) A prefabricated assembly for incorporation into a cryogenic chamber, comprising:

a neck tube; and

a pulse tube refrigerator ~~itself comprising~~ that includes at least one pulse tube and at least one regenerator tube; wherein

at least one ~~, characterized in that the~~ cooling ~~stage(s)~~ stage of the pulse tube refrigerator ~~is/are~~ is rigidly mechanically connected to the neck tube by highly conductive thermal links; and [[,]]

the at least one pulse ~~tube(s)~~ tube and at least one regenerator ~~tube(s) being~~ tube are displaced away from the neck tube and from each other.

Claim 3. (Currently Amended) An assembly according to claim 2, wherein the pulse tube refrigerator comprises first and second pulse tubes, and wherein the neck tube is thermally connected to all three of the following points:

[[to the]] a high temperature end of the pulse tubes;

[[to]] a low temperature end of the first pulse tube; and

[[to]] a low temperature end of the second ~~stage~~ pulse tube and the inner cryogen vessel.

Claim 4. (Previously presented) An assembly according to claim 3, wherein at each of the three points, a permanent highly thermally conductive link is provided between the neck tube and the relevant point.

Claim 5. (Currently Amended) An assembly according to claim 2, wherein the links form parts of [[the]] cooling stages of the refrigerator.

Claim 6. (Currently Amended) An assembly according to claim 5 wherein the links are made of copper.

Claim 7. (Currently Amended) An assembly according to claim 2, wherein ~~the diameter of~~ the neck tube has ~~is reduced in size to~~ a diameter that is [[size]] sufficient only to provide access for cryogen fill, current leads and other services, and to allow safe venting of cryogen in the case of a quench.

Claim 8. (Currently Amended) A cryogenic chamber or assembly according to claim 1, wherein the at least one cooling ~~stage(s)~~ stage of the pulse

tube refrigerator [[are]] is rigidly mechanically connected to the neck tube by at least one of: welding; soldering; brazing and clamping.

Claim 9. (Previously Presented) A cryogenic chamber according to claim 1, further comprising a radiation shield interposed between the outer vacuum vessel and the inner cryogen vessel.

Claim 10. (Currently Amended) A cryogenic chamber according to claim 9 wherein [[the]] cooling stage(s) of the pulse tube refrigerator are connected to the inner cryogen vessel and the radiation shield by the highly conductive thermal links.

Claim 11. (Currently Amended) A cryogenic chamber according to claim 9, wherein:

the pulse tube refrigerator is a two-stage refrigerator;

a high temperature end of a first stage pulse tube is connected to the outer vacuum vessel;

[[the]] a low temperature end of the first stage pulse tube is connected to the radiation shield; and

a first stage regenerator tube is connected between the outer vessel and the radiation shield.

Claim 12. (Currently Amended) A cryogenic chamber according to claim 11 wherein:

a high temperature end of a second stage pulse tube is connected to the outer vacuum vessel;

a low temperature end of the second stage pulse tube is connected to the inner cryogen vessel; and

a second stage regenerator tube is connected between the radiation shield at [[the]] a first low temperature end and the inner cryogen vessel at [[the]] a second low temperature end.

Claim 13. (Currently Amended) A cryogenic chamber according to claim 9, wherein the pulse tube refrigerator comprises first and second pulse tubes, and wherein the neck tube is thermally connected to all three of the following points:

[[to]] the outer vacuum vessel and [[the]] a high temperature end of the pulse tubes;

[[to]] the radiation shield and [[the]] a low temperature end of the first pulse tube; and

[[to the]] a low temperature end of the second ~~stage~~ pulse tube and the inner cryogen vessel.

Claim 14. (Previously presented) A cryogenic chamber according to claim 13, wherein at each of the three points, a permanent highly thermally conductive link is provided between the neck tube and the relevant point.

Claim 15. (Currently Amended) A cryogenic chamber according to claim 1, wherein the links form parts of [[the]] cooling stages of the refrigerator.

Claim 16. (Previously presented) A cryogenic chamber according claim 15 wherein the links are made of copper.

Claim 17. (Currently Amended) A cryogenic chamber according to claim 1, wherein the diameter of the neck tube has a diameter that is ~~reduced in size to a size~~ sufficient only to provide access for cryogen fill, current leads and other services, and to allow safe venting of cryogen in the case of a quench.

Claim 18. (Currently Amended) A cryogenic chamber according to claim 12, wherein:

the ~~second~~ cold end of the second stage is part of the cryogen vessel; [[,]] and

a lower part of the neck tube is used as a second stage liquefaction surface.

Claim 19. (Canceled)